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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,708	08/25/2003	Alfred Ecker	038741.52686US	9822
23911	7590	08/25/2005		
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER	
			LEE, PATRICK J	
			ART UNIT	PAPER NUMBER
				2878

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b><i>Office Action Summary</i></b>	Application No.	Applicant(s)
	10/646,708	ECKER ET AL.
	Examiner	Art Unit
	Patrick J. Lee	2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 25 August 2003.

2a)  This action is FINAL.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-20 is/are rejected.

7)  Claim(s) 11 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 25 August 2003 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

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**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0803, 0304.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

## DETAILED ACTION

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Oath/Declaration***

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

### ***Drawings***

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the figures submitted are handwritten. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Claim Objections***

4. Claim 11 is objected to because of the following informalities: The preamble of claim 11 should be consistent with other preambles of claims dependent on claim 1. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 7, & 9-15 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,774,354 B2 to Ames.

With respect to claim 1, Ames discloses a pitch/roll sensor comprising optical fibers (12) with fiber optic Bragg gratings (18) as a Bragg grating sensor arranged on a mass (16) as a workpiece, where fibers (12) are arranged within notches (15) of mass (16).

With respect to claim 2, Ames discloses grating sensor (18) mounted on the surface of mass (16).

With respect to claim 3, Ames discloses grating sensor (18) integrated into the surface of mass (16) through notches (15).

With respect to claim 4, Ames discloses notches (15) designed to match fibers (12).

With respect to claim 5, Ames discloses a plurality of fibers (30, 32, 34) arranged in a different geometrical configuration through the use of bends (see figure 4) and a configuration with three separate fibers (see figure 1).

With respect to claim 7, Ames discloses the use of a grating sensor without curvature (see figure 1).

With respect to claim 9, Ames discloses the use of one fiber with a curved section of approximately 90° and a curved section of approximately 180° (see figure 4).

With respect to claim 10-11, Ames discloses mass (16) being a movable structure (see abstract) as a dynamically loaded component.

With respect to claim 12, Ames discloses a pitch/roll sensor comprising optical fibers (12) with fiber optic Bragg gratings (18) as a Bragg grating sensor arranged on a mass (16) as a workpiece, where fibers (12) are arranged within notches (15) of mass (16) to serve as a metrological instrumentation of workpiece by measuring the pitch and roll of mass (16).

With respect to claim 13, Ames discloses grating sensor (18) mounted on the surface of mass (16).

With respect to claim 14, Ames discloses grating sensor (18) integrated into the surface of mass (16) through notches (15).

With respect to claim 15, Ames discloses a plurality of fibers (30, 32, 34) arranged in a different geometrical configuration through the use of bends (see figure 4) and a configuration with three separate fibers (see figure 1).

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 6, 8, & 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,774,354 B2 to Ames.

With respect to claim 6, Ames does not explicitly disclose the bends of fiber (12') as having different curvatures, but such would have been obvious to one of ordinary skill in the art in order to give the device additional ability to distinguish among different metrological conditions.

With respect to claim 8, Ames does not explicitly disclose the use of angular straight lines, but such would have been obvious to one of ordinary skill in the art in order to grant the device additional sensitivity to shock events and changes in the positioning of the mass (16).

With respect to claim 16, Ames does not explicitly state that the fibers (12) are bonded to notches (15), but such would have been obvious to one of ordinary skill in the art in order to prevent the fibers (12) from falling out during operation of the device.

With respect to claim 17, Ames does not explicitly state the application of the device to a blade of a turbine or housing of a turbine, but such would have been obvious to one of ordinary skill in the art as a mere matter of intended use of the device, as the device taught by Ames produces accurate measurements of the positioning of the mass (16).

With respect to claim 18, Ames does not explicitly state that the fibers (12) are bonded to notches (15), but such would have been obvious to one of ordinary skill in the art in order to prevent the fibers (12) from falling out during operation of the device.

With respect to claim 19, Ames does not explicitly disclose the bends of fiber (12') as having different curvatures, but such would have been obvious to one of ordinary skill in the art in order to give the device additional ability to distinguish among different metrological conditions.

With respect to claim 20, Ames does not explicitly state the application of the device to a blade of a turbine or housing of a turbine, but such would have been obvious to one of ordinary skill in the art as a mere matter of intended use of the device, as the device taught by Ames produces accurate measurements of the positioning of the mass (16).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee  
Examiner  
Art Unit 2878

PJL  
August 10<sup>th</sup>, 2005



Stephone B. Allen  
Stephone B. Allen  
Primary Examiner